

## MANY EARTHQUAKES IN BEAUTIFUL JAPAN

It was near the end of August that a mountain, or perhaps more properly speaking, a high hill, was raised by an earthquake to the level of the plain of Igusa, in the northern part of Japan. That hill was more than 500 feet high and covered forty acres of the outskirts of the village of Koiwayama. It sank in the night, and in the morning the terror-stricken residents of Koiwayama were startled to find that it had disappeared from view forever. Apropos of this occurrence, Mr. Clarence



WINE TO THE GODS, TO PROPITIATE VOLCANO'S WRATH.

Brownell, author of "Tales from Tokio," writes the following account of his own experiences with earthquakes in Japan:

"We were up to dine near the Imperial university in Tokio, Japan, one evening, in the beautiful puzzle-pathed grounds known as Kaga Yashiki, where once the Prince of Kaga had his palace. The building had become one for the investigation of earthquakes, where those uncanny disturbances made records on various contrivances a famous specialist had devised for measuring all sorts of jolts and jars and palpitations. Their capacity for notation included all disturbances from the upheaval of a mountain range to the alighting of the most



VILLAGE ROAD IN JAPAN, AFTER AN EARTHQUAKE.

careful fly. The professor in charge explained what a "quake" did to an earth particle during a seismic disturbance—how it moved east and west, north, south and up and down. He showed a "track" a colleague of his, Professor Sekiya, had made to illustrate the movement. The track was of wire bent and twisted so that it looked like a skein of yarn. A kitten had been playing with it. To follow it from end to end would have taken a patient man a week.

"Oh, for an earthquake," said one of the visitors.

"Well, you may not have long to wait," said the professor. "We have about 500 a year in Japan, you know. One may be along before the evening's over."

And he spoke truly, for the servants had no more than brought on the fish, when the floor began to wiggle, the lamps and pictures to sway, the windows to rattle and the dishes on the mahogany to clatter as young roosters do. He exclaimed:

"Here you are, boys. How singularly apropos. I'll have some good records to show you in the morning. Meanwhile, as this building is a bit old, I suggest we get under the table. It is built on the earthquake plan and should the roof fall, we are safe there."

By the time he had said "there" all of us were there, riding on the sealess billows of the floor, which creaked and undulated and bumped our heads against the table's under surface and rolled us against its stalwart legs and against each other as though we were great dough billiard balls trying to make cannon and cushion shots.

When we came from under the table the professor lighted a cigarette and said:

"All Japan is an upheaval, and off the coast a bit, say from 50 to 200 miles east of Sendai, a town north of here, there is the greatest depression in the world's crust we know of. The Tuscara Deep we call it, after the United States government vessel that discovered it. It would be safe to dive

from the top of Fuji into Tuscara Deep, at least there would be plenty of water and no danger of striking bottom. The depth is more than 24,000 feet. Fuji, the highest point of Japan's upheaval, is 12,400 feet. So we have 36,000 feet between top and bottom. A safe seven miles, I fancy."

Down near Nagasaki, the chief seaport on the island of Kishiu, is the largest active volcano in the world, Aso San, yet in spite of its activity and the terrible eruptions it has had, there are some seventy villages inside the crater, with a total population of perhaps 20,000. During one eruption Aso San destroyed 50,000 lives—obliterated them.

All conditions of men, from Mikados down to the most lowly, have made offerings and prayers to propitiate the wrath of this vast volcanic mountain. Once the people heard rumblings and went to the priest with money, but in vain. The rumblings continued, and the priest said that probably God wanted more money. Then the people gave again, but God did not grant their prayer.

"He thinks you have given insufficiently," explained the priest, so the people gave a third time. Then the holy man beat his sacred drum and changed the sacred gong, repeated seven prayers and informed his parishioners that God advised them twice. First, in the case of flood run to the hills. Second, in case of earthquakes run to the bamboo forest, where the matted roots form a network that would hold them up even though the ground should open. And the people went away dissatisfied, for they had known this all along.

### WAYS OF THE HORNED TOAD.

Charles F. Holder, the naturalist, writes of horned toads as follows in the Scientific American: "In handling the lizards, which are perfectly harmless, despite their warlike array of spines, I noticed that, although I had treated them gently, my hands were spotted with blood, and upon examining one of the animal's I found that its eyes were suffused with blood, while in another specimen its eye appeared to be destroyed, or represented by a blood spot. I at first assumed that while together the animals had injured each other with their spines; but suddenly, when holding a lizard near my face, it depressed or lowered its head, and I immediately received

a fine spray-like discharge, which proved to be blood. A glance at the animal showed that its eyes were bloody, as though ruptured. The volley had come so suddenly that I did not see it, but I was convinced that in some way the lizard had ruptured a blood vessel in its eyes and had forced the fluid through the air a distance of at least a foot.

"I immediately began to experiment with the little captives, and found that the above explanation was the case beyond question; but only a small percentage of the lizards could be induced to respond to my methods; giving them slight taps on the head seemed to exasperate them the most, and they would lower the head convulsively, the eye would be depressed, and a jet of thick blood, or blood which congealed very quickly, would be shot in a delicate stream to an extraordinary distance.

"Suspecting that the lizards did not consider me a dangerous enemy, and that I would have better success with some animal, I called in the aid of a fox terrier, for which the little creatures evinced the greatest fear. When the dog placed his nose near them they crouched low and endeavored to shuffle themselves under the sand out of sight; but when the dog was urged on and began to bark they would draw back, hiss slightly, then depress the head, and the white face of the enemy would at once be spattered with drops of blood. Such a discharge was very effective and when received in the nostrils it caused the dog no little annoyance and he ran around excitedly for a moment vainly endeavoring to rid himself of the fluid, which evidently had some disagreeable feature."

### How He Knew.

Dashaway—Did you tell the Bridgelys that I was going to call there last night? Cleverton—Yes. How did you know? Dashaway—The wedding present I gave them was in the front parlor—Town and Country.

## NOTES ON SCIENCE.

### CURRENT NOTES OF DISCOVERY AND INVENTION.

**Danger to Health in School Rooms—A Wire Fence Convenience—Curved Ruler Invented by a Russian—The Smallest Watch.**

#### DANGER TO HEALTH IN SCHOOLS.

Many people who are scrupulously careful of the health of their children in the home are strangely indifferent to the conditions prevailing in the school. Hygiene in the public schools is a subject that is yearly receiving more and more attention, with the result that new school buildings in the larger towns and the cities conform generally to sanitary standards, but this is not true of many of the old buildings and of many schoolhouses in small places. It is the duty of all parents to know how far they fall short, and why, and what is needed to make them healthy.

The rules as to contagious diseases should be more strict, or rather more strictly enforced, and parents should remember that danger may lurk in complaints often considered of slight importance. Whooping-cough, for instance, is thought by many people to be an unimportant and necessary trouble of childhood which it is better to get over and have out of the way. They do not know, or they forget, that while whooping-cough is not a dangerous disease for older children, it is dangerous and often fatal to very young children, and is easily carried by the children attending school to the babies in the nursery.

Too much attention cannot be paid to the question of light in the schoolroom. Many children are made premature wrecks from unrecognized eyestrain, and school visitors may often see small, helpless children sitting blinking in the sunlight which streams through a large window in front of them, making frowning efforts through the glare to read from a blackboard, and using up in a few hours the nerve force of a week. Light should be abundant and should come from the left side, so that no shadow is thrown on slate or book, as is the case when the light comes from behind or from the right.

Another most important matter is the properly constructed desk, which will prevent undue stooping, contortions, or impediment to correct breathing.

In considering the subject of ventilation, there should, of course, be some system in every schoolroom by which air can be introduced from outside and then allowed to escape without using the windows, which cannot always be depended upon on account of drafts and storms. These and many other points should be insisted upon by parents.

#### WHY SILVER TARNISHES.

Although every housekeeper is painfully aware of the tendency of silverware to part with its brilliancy and become tarnished when exposed to ordinary atmospheric influences, many do not know that the cause of the tarnishing is the action of sulphur in the air. Unless frequently cleaned, the surface of silver will become black in the course of a few months. The best way to keep silver bright, without the necessity of cleaning, is said to be to coat the surface with a thin solution of collodion varnish diluted with spirits of wine. After being applied with a soft brush the spirit evaporates, leaving a thin, glossy, transparent film on the polished surface. Warm water removes the varnish. Tarnished silver may be restored by careful rubbing with a soft cloth wet with dilute solution of potassium cyanide,—one ounce to a quart of water,—followed by rinsing.

#### A WIRE FENCE CONVENIENCE.

A wire fence always presents to those who understand the "power" of its bars a formidable appearance, and, in truth, is an unpleasant affair to cross, either by climbing over or crawling under, or between the strands. Happily, however, the accompanying illustration shows a convenient and safe arrangement whereby such barriers may be crossed as often as desired, and that without any



A STEP-LADDER.

tension on the wires being lost by cutting a gateway.

It is simply a double stepladder, and can be constructed by any one at all handy with tools in a short time, the railing consisting of gas pipe, the lower ends of which should be deeply inserted into the ground. Where a wire fence has to be crossed frequently in some out of the way locality this device is of great value.

#### ROOM IN THE WEST.

It is not generally known that there are in the United States unutilized areas of land to the extent of 600,000,000 acres. There are times when one is apt to think that the country is getting a trifle crowded, and one welcomes the opening of little tracts of a few hundred thousand acres as affording opportune relief to a condition of almost dangerous congestion. But all Europe does not possess the area which is included in the arid region west of the Mississippi. There's the rub—it is an arid region. But in these

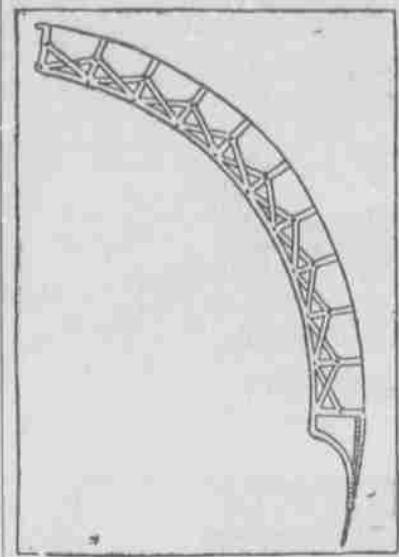
days of vast increase in the employment of irrigation, the solution of the problem of congestion appears.

This tremendous expanse of territory is capable of supporting a population of 30,000,000 people. At the increase rate of only 5,000,000 or 6,000,000 in a decade, it will be a long time before the population of the country has reached 125,000,000. But the preparations must be made to accommodate a population roughly estimated by these figures.

#### CURVED RULER INVENTED.

In the picture is shown an adjustable curved ruler invented by Prince Ananias Gagarin of St. Petersburg, Russia, which will be found very convenient in drawing schools, architects' offices and for designers' use generally. With the aid of this ruler it is not only possible to draw a curve of any radius, but also to measure curves accurately, a gauge being provided to indicate the circumference or diameter of the circle formed by a continuation of the arc.

The frame of the ruler consists of a series of pivoted levers connected with each other in such a manner that when the adjusting screw is turned the arc of the circle is varied accordingly. The face of the ruler which maintains



the curve is a steel strip suspended from the levers in such a manner as to allow free play between the ends. The adjusting gauge has a sliding indicator attached to the end of the steel strip, and as the levers are moved in either direction this indicator moves correspondingly to show the size of the arc.

#### RUBBER FORESTS IN VENEZUELA.

Along the river Orinoco the caoutchouc, or rubber, trees are scattered about in families, in forests composed of many other valuable woods. The men engaged in the collection of the raw rubber make entrances into the thick forest on the banks of the stream, and then open tracks penetrating the leafy wilderness. They find from 100 to 200 rubber trees along the course of each of these tracks, although the distance seldom exceeds two-thirds of a mile. The milk, which is white when it issues from the tree, is coagulated with smoke into dark balls, weighing about 44 pounds apiece. Recently the planting of rubber trees has become a considerable industry in Venezuela.

#### CAKE DISH AND CANDLE HOLDER.

Mrs. Julia Alice Earl of Cincinnati has invented a combined dish and candle holder for use in connection with birthday cakes. It has a central vertical tube, with a second tube coupled to the first one at its upper end in such a way as to be easily removed. The second tube supports a series of branches, which in their turn are provided with sockets to hold the candles. One advantage of the arrangement is that any one of the sets of candles may be removed at a moment's notice, and thus one may have as many tapers as are wanted, or as few.

#### THE SMALLEST WATCH.

What is said to be the smallest watch in the world has recently been made. It is so small that you could get four watches of its size on an area equal to that covered by a 25-cent piece.

The watch was made at Geneva, where special tools were constructed for the purpose. It contains 100 separate parts and weighs one-thirtieth of an ounce, avoirdupois. The hands are, respectively, one-eleventh of an inch and one-twentieth of an inch in length. The watch has been valued at \$1,250.

#### SCIENTIFIC NOTES.

**Improvement in Glass-Blowing.** By employing compressed air, a Dresden manufacturer has lately succeeded in producing glass vessels of extraordinary size. Heretofore, it is said, concave glass could be blown into vessels having a capacity not exceeding about 26 gallons, but by the new process glass bath tubs and large glass kettles can be blown.

**Bronze Powder.** The shining metallic dust that is used to produce the effect of gilt and bronze in wall-papers, printing, lithography, mirror and picture frames, fresco painting, and so on, has its principal source in the bronze-powder factories at Furth, in Bavaria, where this industry has been highly specialized. The material is "Dutch metal," an alloy of copper and spelter. The larger percentage of spelter the more yellowish the alloy. Seven principal tints are produced, varying from golden yellow to bright copper red. The alloy is first prepared in the form of leaf metal which is afterward ground into powder.

## FIRST AMERICAN RAILROAD.

**Man Still Living Who Prophesied Its Present Development.**

John Gilman of Worcester, Massachusetts, who is stopping at the Brown Palace Hotel, says a late issue of the Denver News, witnessed the construction of the first railroad in the United States. It was the Boston & Albany, begun in 1826 and completed in 1837. It ran through what was then his father's farm. Although people predicted in his hearing that that would be the only road ever constructed in the country, he made the youthful boast that time would see a road in operation from ocean to ocean.

"People thought I was crazy when I said that," remarked Mr. Gilman. "But I was not, for I have lived long enough to cross the continent forty-one times on the six roads which have since been built."

Mr. Gilman is the originator of the exhibition car project, and is touring the West arranging for 275 cars which will be fitted up by the various states and taken East to advertise the country. He constructed his first car twenty-three years ago. The late George M. Pullman became interested in the scheme with him, and at the time of his death was half owner.

#### Ladies Can Wear Shoes.

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#### Nobility on the Stage.

German nobles, like their kindred in England, begin to take to the stage, says the World's Berlin correspondent. The court theater of Munich boasts a baron and two counts among its staff. Not less than 104 nobles are at present engaged on the German stage in various capacities.

"Honest, now, Uncle Eph'm," said one of the young men, "did you ever, in all your life, have as much money as \$10 at one time?" "I was wuff eighteen hundred dollars once," replied Uncle Eph'm, stiffly. "Jew as I stood."

**Mrs. Winslow's Soothing Syrup.** For children teething, softens the gums, reduces inflammation, allays pain, cures wind colic, 25c a bottle.

Charles—Did the tailor take your measure? Alcy—I think he did. He said I'd have to pay in advance.



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I now wish to thank you, your medicine is a friend to suffering women."—LILLIE DEGENKOLBE.

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